

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

PCT

(10) International Publication Number
WO 2005/048610 A3

(51) International Patent Classification⁷: H04B 7/14
(21) International Application Number:
PCT/US2004/031606
(22) International Filing Date:
24 September 2004 (24.09.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/505,852 26 September 2003 (26.09.2003) US

(71) Applicant (for all designated States except US): **ANDREW CORPORATION** [US/US]; 19700 Janelia Farm Boulevard, Ashburn, VA 20147-2405 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ALLES, Martin** [US/—]; 16 Stonehaven Road, Hamilton Parish, FL04 (BM). **KENNEDY, Joseph, P., Jr.** [US/US]; 11127 Elmview Place, Great Falls, VA 22066 (US). **CARLSON, John, P.** [US/US]; 12006 Trossack Road, Herndon, VA 20170 (US).

(74) Agent: **COMTOIS, Mark, C**; 1667 K Street, N.W., Suite 700, Washington, DC 20006 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

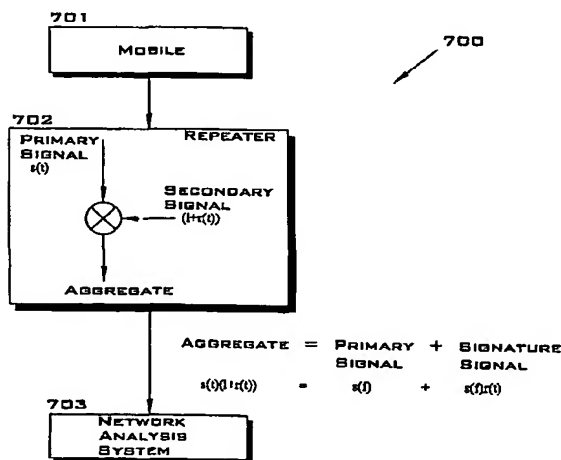
Published:

— with international search report

(88) Date of publication of the international search report:
26 January 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD OF OPERATION FOR NETWORK OVERLAY GEOLOCATION SYSTEM WITH REPEATERS USING AM GOLAY HADAMARD SIGNATURES



(57) Abstract: A system and method for a network overlay geolocation system operating in a host wireless communication system with repeaters. enable a wireless communication system to determine if signals being received by system receivers arrive directly from a target mobile (701) or if the signals are passing through or via a repeater (702). The system's repeaters use a co-channel AM Golay Hadamard sequence multiplied by an uplink signal to watermark the repeated signal. The system uses the known AM Golay Hadamard sequences of the repeaters and the uplink signal to detect whether a repeater has operated on the signal and which repeater operated on the uplink signal. Management data can be used to provide more accurate geolocation of mobiles served by the repeater stations.

WO 2005/048610 A3